

**Cruise Report**  
**Regional Monitoring Program**  
**Summer 2001 Bivalve Maintenance Cruise**  
**August 1-3, 2001**

1. INTRODUCTION

This report describes activities associated with the Summer 2001 bivalve maintenance cruise of the Regional Monitoring Program for Trace Substances in the San Francisco Estuary. Measurement of contaminant bioaccumulation in transplanted bivalves is one component of this program that is designed to provide long-term data on concentrations of trace metals and organic compounds in water, sediments, and tissues, as well as toxicity throughout the estuary.

Contaminant bioaccumulation in bivalves is being measured in this program by attempting to collect bivalves from sites that are known to be clean and transplanting them to separate mooring locations in the Estuary. Three species of bivalves, *Mytilus californianus*, *Mytilus edulis*, and *Crassostrea gigas*, were deployed on June 12-21, 2001 at 12<sup>1</sup> different locations depending upon the expected range of salinity. *M. californianus* and *M. edulis* were deployed at all sites. In addition, *C. gigas* were deployed at sites with intermediate salinities.

*M. californianus* were collected from Bodega Head. *C. gigas* were obtained from a commercial grower in Tomales Bay. *M. edulis* were collected from Tomales Bay. *C. fluminea* was not deployed as part of this cruise as resident bivalves will be harvested and analyzed for the Sacramento and San Joaquin River stations during the Bivalve Retrieval Cruise.

2. CRUISE REPORT

2.1. Objective

The objectives of this cruise were:

- 1) Check and maintain bivalve moorings at 12 sites.
- 2) Obtain CTD cast from each deployed station.

---

<sup>1</sup> Bivalves were not deployed at the Sacramento River, San Joaquin River, and Grizzly Bay stations.

## 2.2. Personnel

The personnel and work assignments for this cruise were as follows:

<u>Name</u>	<u>Affiliation</u>	<u>Duties</u>
David Bell	AMS	Cruise Manager, Dive Master
Gordon Becker	AMS	Dive Tender
David Morgan	Romberg Tiburon Ctr.	Vessel Skipper
Paul Salop	AMS	Diver

## 2.3. Activities

<u>Date</u>	<u>Time</u>	<u>Activity</u>
8/1/01	0930 - 0955	Mobilized gear aboard <i>R/V Questuary</i> , Emeryville Marina. Departed for Yerba Buena Island (BC10).
	1015 - 1040	Checked and maintained mooring at Yerba Buena Island, departed for Alameda (BB71).
	1106 - 1127	Checked and maintained mooring at Alameda, departed for Redwood Creek (BA40).
	1207 - 1224	Checked and maintained mooring at Redwood Creek, departed for Dumbarton Bridge (BA30).
	1240 - 1259	Checked and maintained mooring at Dumbarton Bridge, departed for Coyote Creek (BA10).
	1317 - 1328	Checked and maintained mooring at Coyote Creek, departed for Emeryville Marina.
	1530 - 1535	Arrived Emeryville Marina, demobilized vessel
8/2/01	0930 - 0945	Mobilized gear and conducted safety briefing above <i>R/V Questuary</i> , Emeryville Marina. Departed for Horseshoe Bay (BC21).
	1021 - 1040	Checked and maintained mooring at Horseshoe Bay, departed for Red Rock (BC60).
	1147 - 1203	Checked and maintained mooring at Red Rock, departed for San Pablo Bay (BD20).
	1245 - 1305	Checked and maintained mooring at San Pablo Bay, departed for Petaluma River (BD15).
	1330 - 1351	Checked and maintained mooring at Petaluma River, departed for Pinole Point (BD30).

<u>Date</u>	<u>Time</u>	<u>Activity</u>
	1425 - 1441	Checked and maintained mooring at Pinole Point, departed for Paradise Cay Marina (Tiburon).
	1516 - 1525	Arrived at Paradise Cay Marina, demobilized vessel. Crew subsequently transited to Emeryville Marina by Captain Morgan.
8/3/00	0915 - 0935	Mobilized gear and conducted safety briefing aboard <i>RV Questuary</i> , Vallejo Public Launch Ramp. Departed for Napa River (BD50).
	0945 - 1004	Checked and maintained mooring at Napa River, departed for Davis Point (BD40).
	1012 - 1028	Checked and maintained mooring at Davis Point. Departed for Vallejo Public Boat Launch.
	1042 - 1045	Arrived at Vallejo Public Boat Launch. Mrs. Bell and Salop dropped off to transit vehicles to Vallejo Marina for boat demobilization.
	1055 - 1108	Demobilized vessel. Water samples for TSS and salinity delivered by Mr. Bell to AMS in Livermore.

#### 2.4. Discussion

##### *Bivalve and Mooring Condition*

All moorings were generally in good condition and all showed few signs of biological fouling. At stations where “cage” type bivalve containment devices were deployed, no maintenance was performed. Heavy predation of bivalves in containment bags was noted at the Yerba Buena Island site – cages appeared to be protecting well against predation.

##### *General Comments*

All mooring were maintained appropriately. CTD was unable to be used at stations due to its required presence on the RMP Water Cruise. Two alternative methods were employed to gather data: 1) RMP Water Cruise stations in proximity to bivalve stations can be used as general surrogates; 2) grab samples were obtained from each site at time of maintenance for analysis of TSS and salinity.

**Table 1. Observations of Mooring and Bivalve Condition**

<u>Site Name/Code</u>	<u>Comments</u>
Coyote Creek/BA10	Zero visibility, mooring gear in good shape.
Dumbarton Bridge/BA30	Broken piling yet to be replaced. Visibility 0.5 ft., mooring gear in good shape. Heavy biological fouling.
Redwood Creek/BA40	Visibility 0.5 ft., mooring gear in good shape. Moderate biological fouling.
Alameda/BB71	Zero visibility, mooring gear in good shape.
Yerba Buena Island/BC10	Visibility 3 ft., mooring gear in good shape. Heavy predation on bagged bivalves.
Horseshoe Bay/BC21	Visibility 3 ft., mooring gear in good shape.
Red Rock/BC60	Visibility 2 – 3 ft, mooring gear in good shape.
Pinole Point/BD30	Zero visibility, mooring gear in good shape
San Pablo Bay/BD20	Zero visibility, mooring gear in good shape.
Petaluma River/BD15	Zero visibility, mooring gear in good shape.
Davis Point/BD40	Zero visibility, mooring gear in good shape.
Napa River/BD50	Zero visibility, mooring gear in good shape.
Grizzly Bay/BF20	No clams deployed at this site, did not examine mooring.
Sacramento River/BG20	No clams deployed at this site, did not examine mooring.
San Joaquin River/BG30	No clams deployed at this site, did not examine mooring.